Notice of Allowability	Application No.	Applicant(s)	
	10/609,433	OESTERREICHER ET AL.	
	Examiner	Art Unit	
	Sheng-Jen Tsai	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *12/3/2007*.

2. ☒ The allowed claim(s) is/are *original claims 1,2,8-16,19-29 and 41-47*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. This Office Action is taken in response to Applicants' Request for Continued Examination (RCE) filed on December 3, 2007 regarding application 10/609,433 filed on June 27, 2003.

2. Claims 1, 8, 11-13 and 19-23 have been amended.

Claims 24-48 have been added.

Claims 3-7 and 17-18 have been cancelled.

Claims 1-2, 8-16 and 19-48 are pending for consideration.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

4. Authorization for this examiner's amendment was given in a telephone interview with Nathaniel Gilder (Reg. No. 53,233) on 01/18/2008.

The claims of the application have been amended over the amendments filed on 12/3/2007 as follows:

- **Original Claims 30-40 are now cancelled.**
- **Original Claim 48 is now cancelled.**
- **Original Claim 1 is now amended to be**:

"A method for reducing bus traversal in a media server comprising a host processor, at least one network interface, and a storage subsystem comprising one or more storage

devices, the host processor and the at least one network interface being connected to a first input-output bus, the storage subsystem being connected to a second input-output bus, the first and second input-output buses being connected via a controller, the method comprising:

receiving a request for a media asset via a network, said request being received by a network interface;

receiving the request at the an adaptable cache at least partially inside said media server, said adaptable cache hot-swappably connected to the first input-output bus, said adaptable cache comprising a data interface, core logic configured to dynamically alter its operating characteristics by modification of a caching rule to account for asset request frequency without disconnecting said adaptable cache from the media server, and electronic storage media;

processing the request by the adaptable cache, wherein if the requested media asset is found on the electronic storage media, the media asset is returned to the user via the first bus and wherein if the requested media asset is not found on the electronic storage media, the media asset is accessed from the storage subsystem and returned to the user via the second bus and first bus, wherein the adaptable cache:

monitors requests for media assets;

maintains a sorted list of pairs of overlapping requests for the same asset, said list identifying pairs of requests with the shortest intervals between their start times;

determines whether select media assets should be cached;

transfers said select media assets from said one or more storage devices to the electronic storage media; and,

notifies at least one requesting application that the adaptable cache can accept future requests for said select media assets."

- **Original Claim 13 is now amended to be**:

"A method for improving transactional performance in a media server comprising a host processor, a at least one network interface, and a storage subsystem comprising one or more storage devices, the host processor and the at least one network interface being connected to a first input-output bus, the storage subsystem being connected to a second input-output bus, the first and second input-output buses being connected via a controller, the method comprising:

receiving a request for a media asset at a network interface;

receiving the request at an adaptable cache at least partially inside said media server, said adaptable cache hot-swappably connected to the second input-output bus, said adaptable cache comprising a data interface, a core logic, and electronic storage media, and configured to:

dynamically alter its operating characteristics by modification of a caching rule to account for asset request frequency without disconnecting said adaptable cache from the media server;

determine whether to retrieve and store data from the storage subsystem based on the algorithms and/or heuristics;

alter the storage size of the electronic storage media without disrupting the operation of the media server; and

retrieve data from the storage subsystem using its own data interface;

processing the request by the adaptable cache, wherein if the requested media asset is found on the electronic storage media, the media asset is returned to the user without accessing the one or more storage devices on the storage subsystem, and wherein if the requested media asset is not found on the electronic storage media, the media asset is accessed from one or more storage devices on the storage subsystem and returned to the user, wherein the adaptable cache:

monitors requests for media assets;

maintains a sorted list of pairs of overlapping requests for the same asset, said list identifying pairs of requests with the shortest intervals between their start times;

determines whether select media assets should be cached;

transfers said select media assets from said one or more storage devices to the electronic storage media; and,

notifies, at least one requesting application that the adaptable cache can accept future requests for said select media assets."

- **Original Claim 22 is now amended to be**:

"A system for facilitating delivery of media resources, comprising:

a media server comprising a host processor, at least one network interface, and a storage subsystem comprising one or more storage devices, the host processor and the at least one network interface being connected to a first input-output bus, the storage

subsystem being connected to a second input-output bus, the first and second input-output buses being connected via a controller;

an adaptable cache at least partially inside said media server, said adaptable cache hot-swappably connected to an input-output bus of the media server, and comprising a data interface, core logic configured to dynamically alter its operating characteristics by modification of a caching rule to account for asset request frequency without disconnecting said adaptable cache from the media server, and electronic storage media, the adaptable cache being adapted to store data on the electronic storage media, and further being adapted to receive and process requests for media assets, wherein if the requested media asset is found on the electronic storage media, the media asset is returned via one or more I/O buses, and wherein if the requested media asset is not found on the electronic storage media, the media asset is accessed from the storage subsystem and returned, and wherein said adaptable cache is further adapted to monitor requests for media assets, to maintain a sorted list of pairs of overlapping requests for the same asset, said list identifying pairs of requests with the shortest intervals between their start times, to determine, based at least in part on said cache operating characteristics, whether select media assets should be cached, to transfer said select media assets from one or more storage devices to the electronic storage media, and to notify at least a requesting application that the adaptable cache can accept future requests for said select media assets."

- **Original Claim 23 is now amended to be**:

"A method for simulating passive monitoring of a bus by an adaptable cache means hot-swappably connected to said bus and positioned at least partially inside a media server, comprising:

identifying a first component that transmits messages to a second component, said messages desired to be monitored by an adaptable cache means comprising a data interface, a core logic configured to dynamically alter its operating characteristics by modification of a caching rule to account for asset request frequency without disconnecting said adaptable cache from the media server, and electronic storage media;

adapting the first component to address the message to both the second component and the adaptable cache means, wherein the adaptable cache means:

monitors requests for media assets;

<u>maintains a sorted list of pairs of overlapping requests for the same asset, said list identifying pairs of requests with the shortest intervals between their start times;</u>

determines whether select media assets should be cached;

transfers said select media assets from one or more storage devices to the electronic storage media; and,

notifies at least one requesting application that the adaptable cache can accept future requests for said select media assets."

- **Original Claim 41 is now amended to be**:

"A media server means for delivering requested media assets to requesting clients, comprising:

at least one network interface means for receiving media asset requests on behalf of said media server, said media asset requests being delivered via a network, and for returning requested media assets to a requesting client via said network;

a storage subsystem means for storing a plurality of media assets;

a host processor means for processing said requests for media assets, said host processor means coupled to said network interface means via a first Input/Output (I/O) bus,

wherein said host processor means is configured to retrieve requested media assets from said storage subsystem means and deliver said requested media assets to said network interface means;

a controller means for connecting said first I/O bus to a second I/O bus, said second I/O bus being coupled to said storage subsystem means; and

an adaptable cache means for detecting media asset requests, and for proactively caching media assets and notifying potential calling applications of media assets stored in said adaptable cache, wherein the adaptable cache means:

monitors requests for media assets;

maintains a sorted list of pairs of overlapping requests for the same asset, said list identifying pairs of requests with the shortest intervals between their start times;

determines whether select media assets should be cached;

transfers said select media assets from said one or more storage devices to the electronic storage media; and,

notifies, at least one requesting application that the adaptable cache can accept future requests for said select media assets."

Allowable Subject Matter

5. Original claims 1-2, 8-16, 19-29 and 41-47 are allowed.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheng-Jen Tsai whose telephone number is 571-272-4178. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheng-Jen Tsai
Examiner
Art Unit 2186

January 25, 2008

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